

EXHIBIT A

Dr. Dale's opinions are contained in a signed Expert Witness Report from him dated June 1, 2009, attached hereto, submitted in conformity with Rule 26 of the Federal Rules of Civil Procedure.

Dated this 1st day of June, 2009.

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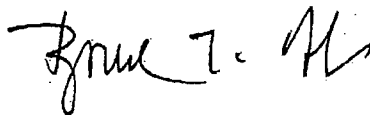
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EXPERT REPORT

Bruce E. Dale, Ph. D.
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Signed

A handwritten signature in black ink, appearing to read "Bruce E. Dale", with a stylized flourish at the end.

Bruce E. Dale, Ph. D.

June 1, 2009

BASIS AND SUPPORTING INFORMATION

I have been retained by counsel for United States Fidelity and Guaranty Company (USF &G) and The Continental Insurance Company (Continental) to provide expert analyses, opinions, and testimony in connection with litigation pending in Billings, Montana, involving USF&G, Continental and Soco West, Inc. (Soco). The litigation concerns perchloroethylene (perc) contamination at the former Dyce Chemical facility in Lockwood, Montana, now owned by Soco. I understand that Soco alleges in the litigation that some time during the period 1975-1977, approximately 250-1000 gallons of perc were released in the loading and unloading area of the Dyce facility. I also understand that during that time period, the loading and unloading area was paved with asphalt.

The expert opinions summarized in this report are based on my qualifications as a chemical engineer and my work in this case. I am a professor of chemical engineering and former Chair of the Department of Chemical Engineering and Materials Science at Michigan State University (East Lansing, Michigan). I have B.S. (*magna cum laude*), M.S. and Ph. D. degrees in the field of chemical engineering. Chemical engineering is that branch of engineering most closely connected with the production, use and properties of synthetic solvents such as perc, the contaminant at issue in this case. In addition, during the past twelve years I have made an intensive focused study of spills, leaks and other discharges of perc and perc-containing wastes. I have previously testified as an expert and given depositions as set forth below.

OPINIONS

1. *Obvious physical evidence would have resulted from any large release of perc at Dyce Chemical like that alleged in the litigation, given the properties of perc as described more fully below. Such evidence includes:*

- a. Discoloration of and damage to asphalt
- b. Areas of thick, tarry asphalt/perc mixtures
- c. Asphalt stains on structures and the ground
- d. Perc odors noticeable over a large area

2. *The physical properties of perc pertinent to my opinions include the following:*

- a. Given the density and viscosity of perc, a release of 250 gallons of perc onto an intact, level surface with which perc did not interact, would spread to a circle about 48 feet in diameter. A release of 1000 gallons would spread to encompass a circle about 97 feet in diameter. The diameter of releases of those quantities of perc onto asphalt would vary due to a number of factors (including, e.g., slope and weather conditions), but still would result in a substantial spreading of perc over the ground surface.

- b. Because the density of perc, 250 gallons of perc weighs 1.7 tons and 1000 gallons weighs 6.8 tons.
- c. Perc is a good solvent for hydrocarbon compounds such as asphalt, and will dissolve the hydrocarbon (black) portion of asphalt. It also will attack many types of plastic and rubber, as well as plastic or rubber insulation on electrical wires.
- d. Perc is a clear liquid. If released onto asphalt, perc will almost immediately begin to turn dark.
- e. Perc is denser than water and does not dissolve in water to any significant extent. If asphalt is present below a layer of water, perc will sink through the water and begin to dissolve the asphalt.
- f. The freezing point of perc is about -8 degrees Fahrenheit. If released onto an icy surface, perc will tend to melt the ice and sink through the resulting water layer, then dissolve any asphalt that is beneath the water.
- g. When perc dissolves asphalt, the resulting mixture will remain as a tarry mass for a long period of time, depending on variables such as temperature, the relative amounts of perc and asphalt present, wind speed, etc.
- h. Perc has a distinctive, penetrating smell. A concentration about 50 ppm (0.005%) of perc in air can be detected by most people. The smell caused by a release of 250-1000 gallons of perc would be noticeable over a large area.

To further illustrate the properties and opinions listed above, I have prepared the video included with this report. That video depicts the near immediate reaction that occurs when asphalt is exposed to perc; quickly turning clear perc into a dark liquid that will stain other surfaces.

I reserve the right to amend or supplement my opinions in the event new information is presented or becomes available.

PUBLICATIONS

My publications over the past 10 years are given below.

- Ferrer, A., F.M. Byers, B. Sulbaran de Ferrer, B.E. Dale and S.C. Ricke. 1999. "Increasing Nutrient Availability of Feather Meal for Ruminants and Non-Ruminants Using and Ammonia Pressurization/Depressurization Process". J. Science of Food and Agriculture. Vol. 79, pg. 828-832.
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- Raghunand, N. and B. E. Dale. 1999. "Alteration of Glucose Consumption Kinetics with Progression of Baculovirus Infection in *Spodoptera frugiperda* Cells" App. Biochem. Biotechnol., Vol. 80, pp. 231-242.
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- Ferrer, A., F. M. Byers, B. Sulbaran-de-Ferrer, B. E. Dale and C. Aiello. 2000. "Optimizing Ammonia Pressurization/Depressurization Processing Conditions to Enhance Enzymatic Susceptibility of Dwarf Elephant Grass" Appl. Biochem. Biotechnol., Vol. 84-86, 2000.
- Foster, B. L, B. E. Dale, and J. B. Doran-Peterson. 2001. "Enzymatic Hydrolysis of Ammonia-Treated Sugar Beet Pulp" Appl. Biochem. Biotechnol., Vol. 91-93, 2001.
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- Sulbaran-de-Ferrer, B.; Aristigueta, M.; Dale, B. E.; Ferrer, A.; Ojeda-de-Rodriguez "Enzymatic Hydrolysis of Ammonia-Treated Rice Straw", *Applied Biochemistry and Biotechnology* Vol. 105-108, 155-164 (2003)
- Dale, B. E. "Greening the Chemical Industry: Research and Development Priorities for Biobased Industrial Products" *J. of Chemical Technology and Biotechnology* Vol. 78, 1093-1103 (2003)
- Zhong, H., Teymouri, F., Chapman, B., Maqbool, S. B., Sabzikar, R., El-Maghraby, Y., Dale, B. E. and Sticklen, M. B. "The pea (*Pisum sativum* L.) rbcS transit peptide directs the *Alcaligenes eutrophus* polyhydroxybutyrate enzymes into the maize (*Zea mays* L.) chloroplasts" *Plant Science*. Vol. 165, 455-462 (2003)
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- Kim, S.; Dale, B. E.; "Life cycle inventory information of the United States electricity system" *International Journal of Life Cycle Assessment* 10, 294-304, (2005).
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- Kim, S. and Dale, B. E. (2008). Life Cycle Assessment of Fuel Ethanol Derived from Corn Grain Via Dry Milling. *Bioresource Technology.* Vol. 99: 5250-5260.

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- Dale, B. E. (2008). Biofuels: Thinking Clearly about the Issues. *J. Agric. Food Chem.* 56: 3885-3891.
- Kim, S., Dale, B. E., Drzal, L.T. and Misra, M. (2008) Life Cycle Assessment of Kenaf Fiber Reinforced Biocomposite. *J. Biobased Materials and Bioenergy.* 2: 85-93.
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COMPENSATION

Compensation is at the rate of \$275 per hour for services rendered. Expert testimony at depositions and courtroom appearances is charged at \$400 per hour plus travel and related expenses. My compensation is not dependent on the outcome of the litigation.

LISTING OF PRIOR EXPERT TESTIMONY: PROFESSOR BRUCE E. DALE

1. Houston General Insurance Company vs. Texas Industrial Services, Cause 93-036410 in the 125th Judicial District Court of Harris County, Texas. Subject: Contamination resulting from dry cleaning operations. Services Provided: Deposition and Trial Testimony. Retained by: Mr. John H. Boswell of Boswell, Hallmark and Brothers, PC, 1010 Lamar Street, Houston (phone 713-650-1600) Status: Concluded
2. Pilgrim Enterprises, Inc. vs. Kleen Rite, Inc., et al. Cause 95-54786 in the 215th Judicial District Court of Harris County, Texas. Subject: Contamination resulting from dry cleaning operations. Retained by Mr. Michael A. Pohl, 1111 Bagby, Suite 2450, Houston, TX (phone 713-652-0100) Services Provided: Deposition and Trial Testimony. Status: Concluded.
3. Western Towing Company, et al, vs. M/V Maersk Shetland, et al. Civil Action No. C-95-175 in the United States District Court for the Southern District of Texas, Corpus Christi Division. Subject: Evaporation of spilled cumene in Corpus Christi Bay. Retained by: Ms. Debra Brewer Hayes, Fleming, Hovenkamp and Grayson, P. C., 1330 Post Oak Boulevard, Houston, Texas. Phone 713-621-7944. Services Provided: Deposition and Trial Testimony. Status: Concluded.
4. Charles Cantrell, et al. v. Toter, Inc., et al. Cause 91-12685 in the 167th Judicial District Court of Travis County, Texas. Subject: Intellectual property concerned with fermentation of plant carbohydrates. Services Provided: Deposition. Retained by: Mr. James L. Wright of Mithoff and Jacks, L.L.P. 111 Congress Avenue, Austin, Texas (phone 512-478-4422). Status: Concluded.
5. Oxy Petrochemicals, Inc. and Equistar Chemicals, LP vs. Air Liquide America et al. Cause No. 98-16891 in the District Court of Harris County, Texas, 189th Judicial District. Subject: Failure of water conditioning equipment leading to loss of steam turbine. Services Provided: Affidavit. Retained by: Terry M. Womac of Phillips and Akers, P.C. 3200 Southwest Parkway, Houston, TX phone 713-552-9595. Status: Concluded
6. Citizens Insurance Company of America v. Puleo's Manufacturing. Case No. 96-20626 in Michigan. Subject: Flame retardant materials for artificial Christmas trees. Retained by Mr. J. William Housefield of Munroe and Nobach, P.C. 241 East Saginaw, Lansing, MI 48823 phone 517-351-3770. Services Provided: Deposition. Status: Concluded.
7. RL & KM, Inc. vs. Team Enterprises, Inc. et al. Case No. CV-F-98-6363 REC (DLB) in the United States District Court, Eastern District of California. Subject: Contamination resulting from dry cleaning operations. Services Provided: Deposition. Status: Concluded
8. City of Modesto and City of Modesto Sewer District No. 1. Vs. The Dow Chemical Company, et. al. Case No. 999345 and 999643 in the Superior Court of the State of

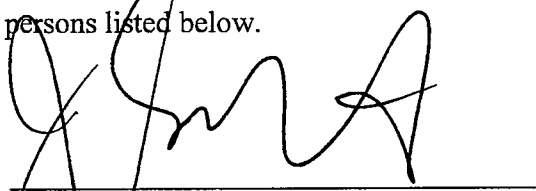
- California in and for the County of San Francisco. Subject: Contamination resulting from dry cleaning operations. Services Provided: Deposition and Trial Testimony. Status: Concluded.
9. Southeast Investments, Inc. v. Qahir S. Tharani, et al. Cause No: 2001-20587-158 158th Judicial District Court, Denton County, Texas. Subject: Contamination resulting from dry cleaning operations. Services Provided: Affidavits and Deposition. Status: Concluded
 10. Hartford Fire Insurance Company as subrogee of City of Port Huron v. Casco, Inc. et al. C. A. No. 02-60053 Hon. Marianne O. Battani, Troy, Michigan. Subject: Cause of fire in warehouse of corn gluten meal. Services provided: Deposition. Status: Concluded.
 11. Vine Street, L.L.C. v. James R. Keeling. Civil Action No. 6:03CV 223 in the United States District Court for the Eastern District of Texas, Tyler Division. Subject: Contamination resulting from dry cleaning operations. Services Provided: Affidavits, Trial Testimony. Status: Concluded.
 12. Franscell, et al v. Suehiro, et al. Case Number CV 96-8895 CBM in the United States District for the Central District of California. Subject: Contamination resulting from dry cleaning operations. Services Provided: Deposition. Status: Concluded.
 13. Continental Casualty Co., et al. v. AmeriPride Services, Inc. Minnesota District Court Case No. CT 04-2506. Subject: Contamination resulting from dry cleaning operations. Services Provided: Deposition. Status: Concluded.
 14. United States Fidelity and Guaranty Company & Continental Insurance Company vs. Brenntag West, Inc., Brenntag, Inc, Stinnes Corporation, and Brenntag Holding N. V. A. United States District Court for the District of Montana, Billings Division Case No. CV-04-29-BU-RFC. Subject: Contamination resulting from chemical storage and distribution facility. Services Provided to Date: Deposition, Trial Testimony. Status: Ongoing.
 15. California Department of Toxic Substances Control vs. Payless Cleaners, et al. No. CIVS-02-2389 LKK DAD. United States District Circuit Eastern Division of California, Sacramento Division. Subject: Contamination due to dry cleaning operations. Services provided: Expert report. Status: Concluded.

DOCUMENTS CONSIDERED

- Warning Label for Perc and instructions on empty container handling and reuse, D085971
- Bulk Handling and Properties of PPG Solvents, D029701 - D02971, 12/30/1995
- Chemical Safety Data Sheet for PCE, D086092 - D086107, 1971
- PCE Brochure, D086074 - D086075, April 1971
- Bulk Handling and Properties of PPG Solvents, 15453 - 15468, 1980
- Dyce's Responses to EPA's First 104(e) Requests, D000415 - D000654, 3/1/2000
- Dyce's Responses to EPA's Second 104(e) Requests, D000657 - D000755, 7/21/2000
- Letter from Dyce to EPA supplementing 104(e) Responses, D135109 - D135110, 9/8/2005
- Soco West, Inc.'s Answers to USF&G's First Set of Interrogatories, dated May 24, 2005
- Aerial Photo of Dyce facility, November 1975
- Report and testimony previously supplied in USF&G v. Soco West, Inc., Case No. CV-04-29-BLG-RFC
- *Dense Chlorinated Solvents and other DNAPLs in Groundwater*. 1996. J. F. Pankow and J. A. Cherry. Waterloo University Press. Guelph, Ontario, Canada.

CERTIFICATE OF SERVICE BY OVERNIGHT MAIL

The undersigned, an attorney, hereby certifies that on the 1st day of June, 2009, a copy of the attached was served by overnight mail upon the persons listed below.



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**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MONTANA
BILLINGS DIVISION**

UNITED STATES FIDELITY AND
GUARANTY COMPANY,

Plaintiff,

and

THE CONTINENTAL INSURANCE
COMPANY,

Plaintiff Intervenor

V.

SOCO WEST, INC.,

Defendant - Counterclaimant.

Case No. CV-04-29-BLG-RFC

Case No. CV 08-29-BLG-RFC

**SUPPLEMENT TO EXPERT
DEPOSITION TESTIMONY OF
BRUCE E. DALE, Ph.D.**

Plaintiffs United States Fidelity and Guaranty Company (“USF&G”) and The Continental Insurance Company (“Continental”) hereby submit the following supplement to Bruce E. Dale’s expert deposition testimony taken in these matters on October 5, 2009 relating to and in support of the opinions set forth in his Expert Report dated June 1, 2009.

Dated this 7th day of October, 2009.

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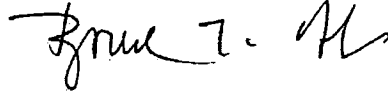
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The Continental Insurance Company*

SUPPLEMENTAL DETAILS OF CALCULATION

In addition to the testimony provided by me in my deposition taken on October 5, 2009 relating to my June 1, 2009 Expert Report, and as requested by counsel for Soco West, Inc., attached are the details underlying the calculation of flow velocity to which I testified at that deposition.

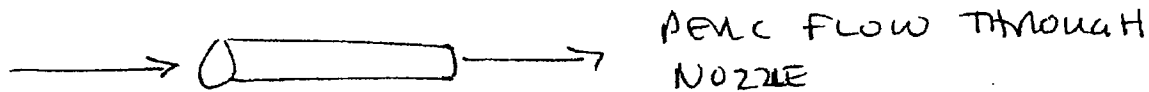
A handwritten signature in black ink, appearing to read "Bruce E. Dale".

Bruce E. Dale, Ph.D.

1/1

CALCULATIONS
 PEAC VELOCITY / MOMENTUM
 BRUCE DALE

OCT. 5, 2009



$$\text{FLOW VELOCITY} = \frac{\text{VOLUMETRIC FLOW RATE (FT}^3\text{/MIN)}}{\text{CROSS SECTIONAL AREA FOR FLOW (FT}^2\text{)}}$$

ASSUME 2" NOZZLE WITH 1.5" INTERNAL DIAMETER

ASSUME PEAC IS AT 60 GALLONS/MIN
 OR 100 GALLONS/MINUTE

$$\text{AREA} = \frac{\pi D^2}{4} = \frac{\pi}{4} \left(\frac{1.5 \text{ in}}{12 \text{ in}} \text{ ft} \right)^2 = 0.0123 \text{ FT}^2$$

$$\begin{aligned} \text{FLOW VELOCITY} &= \frac{60 \text{ GAL}}{\text{MIN}} \bigg| \frac{0.00223 \text{ FT}^3/\text{MIN}}{\text{GAL/MIN}} = 0.134 \text{ FT}^3/\text{MIN} \\ \text{AT 100 GPM} &= 0.223 \text{ FT}^3/\text{MIN} \end{aligned}$$

$$\text{FLOW VELOCITY (60 GPM)} = \frac{0.134 \text{ FT}^3/\text{MIN}}{0.0123 \text{ FT}^2} = 10.9 \text{ FT/SEC}$$

$$\text{AT (100 GPM)} = 18.1 \text{ FT/SEC}$$

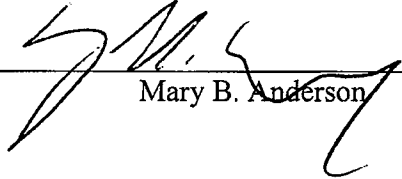
$$\text{CONVERT TO MILES PER HOUR BY } \left(\frac{3600}{5280} \right) = \underline{\underline{7.4 \text{ MPH}}}$$

$$\text{FOR 100 GPM} = \underline{\underline{12.3 \text{ MPH}}}$$

SINCE PEAC IS 63% MORE DENSE THAN WATER THE STREAM OF PEAC IS HITTING WITH A FORCE EQUIVALENT TO A STREAM OF WATER TRAVELING AT 12.1 MILES PER HOUR (60 GPM) OR 20.1 MPH (100 GPM)

CERTIFICATE OF SERVICE

The undersigned, an attorney, hereby certifies that on the 7th day of October, 2009, a copy of the attached was served by electronic and overnight mail upon the persons listed below.



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Dated this 30th day of October, 2009.

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EXPERT REPORT

Bruce E. Dale, Ph. D.
2865 Hagadorn Road
Mason, MI 48854

Signed

A handwritten signature in black ink, appearing to read "Bruce E. Dale", written in a cursive style.

Bruce E. Dale, Ph. D.

October 26, 2009

SUPPLEMENT TO EXPERT REPORT


In addition to the materials identified in my June 1, 2009 Expert Report, I have been provided with additional data that supplement and further confirm certain of the statements and opinions set forth in that report and which I expounded upon during my deposition in this case.

Specifically, on October 23, 2009, I was provided with the Supplemental Expert Report of Kristen K. Stout, with attached figures. That report identifies elevations at various spot locations at the Dyce facility as of November 4, 1975, including at numerous locations at and around the loading and unloading area of the Dyce facility where I understand that defendant Soco West, Inc. alleges that a release of a 250 - 1000 gallons of perchloroethylene took place sometime during 1975-77. The precise elevations computed by Ms. Stout further support my prior statements regarding (1) the lateral spread of 250 - 1000 gallons of perc given the generally level but irregular condition of, and lack of significant or consistent slope in, the loading and unloading area, as documented by the calculations set forth in Figures 13-14 of the Stout Supplemental Report; and (2) the effects of that amount of perc were it to be released on asphalt in the loading and unloading area of the Site given the irregularities among the various spot elevations plotted in and around that area, which would tend to cause pooling of perc at various low points and increase its contact time with the asphalt pavement as a result.

I understand Dr. Stout to be an expert in various methods employed for the analysis of aerial photography, as described in both her July 31 and October 22, 2009 expert reports, both of which I have reviewed and which I understand have been or will be provided to counsel for defendant Soco West, Inc. It is reasonable to rely on computations of the sort referenced above in rendering the expert opinions that I expect to provide at trial in this matter.

CERTIFICATE OF SERVICE

The undersigned, an attorney for Plaintiff United States Fidelity and Guaranty Company, certifies that on October 30, 2009, a copy of the attached was served by overnight mail upon the persons listed below.



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